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DESCRIPTION

OPTICAL DISK DEVICE

This application is a 371 of PCT/JP03/13226 10/16/2003

Technical Field

- 5 The present invention relates to an optical disk device used for recording signals on an optical disk or reproduction signals recorded on an optical disk.

Background Art

- 10 Conventionally, as such an optical disk device, the one disclosed in JP2000-133929 A has been known, for example. Based on this precedent with a part thereof being modified, the following description is made with reference to FIGs. 26 to 30.

- 15 FIG. 26 is a schematic cross-sectional view showing a conventional optical disk device (in the case where a focal point of an objective lens is on a first signal plane of an optical disk). FIG. 27 shows a hologram pattern formed on a hologram that is used in the optical disk device. FIG. 28 shows a photodetection pattern formed on a photodetector that is used in the optical disk device and light distribution on the photodetector in the state shown in FIG. 26. FIG. 29 is a schematic cross-sectional view showing the
20 conventional optical disk device (in the case where a focal point of the objective lens is on a second signal plane of the optical disk). FIG. 30 shows a photodetection pattern formed on the photodetector that is used in the optical disk device and light distribution on the photodetector in the state shown in FIG. 29.

- 25 As shown in FIG. 26, the conventional optical disk device includes a light source 1, a collimator lens 3 for converting light emitted from the light source 1 into parallel light, an objective lens 5 for focusing the parallel light on an optical disk, a hologram 4 for diffracting the light reflected by the optical disk (i.e., returned light), a beam splitter 2 for bending a light path of
30 the returned light that has passed through the hologram 4 and then the collimator lens 3, and a photodetector 7 on which the returned light whose light path has been bent by the beam splitter 2 is focused.

- 35 The optical disk includes a substrate 6 made of a transparent material, a semi-transparent first signal plane 6a formed on a surface of the substrate 6, and a second signal plane 6b formed in proximity to the first